

**Portable Air Permeability Tester
FX 3360 PORTAIR**



SCOPE

The portable air permeability tester FX 3360 PORTAIR is a unique, state-of-the-art instrument for determination of the air permeability (or of the pressure drop at a selectable air velocity) and, with some restrictions, of the thickness of fabrics, nonwovens, felts and films. The main application is paper machine clothing.

The instrument is suitable for both, spot tests and profile measurements on stationary or moving webs, directly in

the production line, the finishing line or at the inspection table. The material has to be under tension.

The PORTAIR is battery operated, compact, lightweight and yet robust, and thus suitable for single-handed operation. If necessary, measurements can be taken overhead, for example to check the paper machine clothing inside the paper machine at difficult-to-reach locations.

FUNCTION

A powerful vacuum pump draws air through a circular opening and through the test material. By means of an exchangeable, calibrated orifice plate the instrument *continuously* determines the air permeability of the material at the selected test pressure or the pressure drop at the selected air velocity, respectively.

For spot testing, the instrument is placed onto the material and the test is started by pushing the start button. A profile measurement is done by manually pushing the instrument over the material during the test. The test results are sampled in regular and selectable intervals and the high-resolution profile is displayed in real-time on the large LCD screen of the instrument.

Suspicious areas of the material can be marked in the profile by a push-button. This greatly facilitates the subsequent error analysis.

When not in use, the PORTAIR can be placed in the supplied storage and carrying case. The built-in battery charger then automatically re-charges the battery of the instrument.

An optional thickness gauge and a magnetic counter plate allow for the determination of the thickness simultaneously with the air permeability or the pressure drop measurement. For the determination of the air permeability and the thickness of used strips of paper machine clothing the optional accessory FX 3360-STR

Strip-Tester with an integrated counter plate for the thickness gauge, is available.



By means of a calibration check plate, the proper function and calibration of the FX 3360 PORTAIR can be checked in a matter of seconds.

The instrument can be calibrated and it is supplied with an ISO conform calibration certificate.

PRESENTATION OF THE TEST RESULTS

The instrument continuously displays the test result, both graphically and numerically. Due to the permanent comparison with the control range of each material, any deviation becomes immediately obvious.

By means of a "Fast Fourier Transformation" (FFT) any periodic variations of the test results can easily be determined and evaluated.

A meaningful statistical analysis summarizes the large amount of data in an easy-to-read way.

The test results can be transferred to a PC for documentation, storage and long-term evaluation. The necessary PC program is supplied together with the instrument.

The PC program generates a comprehensive test report (see insert).

Both, the instrument and the software can be operated in five different languages: German, English, French, Italian and Spanish.

TECHNICAL SPECIFICATIONS

- **Air Permeability:**
 Measuring range: approx. 1 through 5,000 mm/s (0.2 through 1,000 cfm)
 Measuring accuracy: ± 3 % of the displayed value
 Test pressure: 98 through 500 Pa
 Test area: 20 cm²
 Units of measure: cfm, cm³/cm²/s, mm/s, l/m²/s, l/dm²/min, m³/m²/s, m³/m²/min, m³/m²/h

- **Pressure drop:**
 Measuring range: 0.01 through 65,000 Pa
 Measuring accuracy: ± 3 % of the displayed value
 Air velocity: 0.0001 through 10 m/s (0.02 through 2,000 ft/min)
 Test area: 20 cm²

- **Thickness:**
 Measuring range: 0 through 6 mm
 Measuring accuracy: ± 0.02 mm ± 0.5 % of the displayed value
 Units of measure: mm, μ m, mil
 Clamping pressure: 1 through 20 N
 Test area: 1, 2, 3, 10, 20 or 25 cm²

- **General technical specifications:**
 Test point pitch: 1 through 100 mm (0.04 through 4")
 Maximum measuring speed: 200 m/min at 100 mm test point pitch
 Data port: USB 1.1
 Average battery life-time: approx. 120 minutes
 Power requirements: 90 through 264 V, 50 through 60 Hz, 60 W
 Dimensions / weights:
 instrument: 42 x 21 x 16 cm / 4.8 kg
 instrument with transportations case: 55 x 43 x 21 cm / 10.7 kg
 instrument with case, packed for shipping: 61 x 51 x 28 cm / 12.5 kg
 Operating temperature range: 0°C through + 45°C
 Storage temperature range: - 20°C through + 60°C

The instrument is supplied with a storage and carrying case with a built-in battery charger as well as a calibration check plate and an ISO conform calibration certificate.

The PC or laptop computer for storage and long-term evaluation of the test results is *not* part of the scope of supply. The necessary PC software is, however, included.

REQUIREMENTS FOR THE PC

	Minimal	Recommended
• Computer:	Desktop or laptop	Desktop or laptop
• Processor:	Pentium II	Pentium III
• RAM:	64 MB	> 128 MB
• Hard disk:	100 MB available	> 1 GB available
• Drive:	CD-ROM	CD-ROM
• Date ports:	USB 1.1	USB 2.0, Ethernet 10/100 Mbit/s
• Operating system:	Windows 95	Windows 98 or later
• Monitor:	800 x 600 Pixel 256 colors	1,024 x 768 Pixel 16 Mio. colors.

ACCESSORIES

For the portable air permeability tester FX 3360 PORTAIR the following accessories are available:

FX 3360-THG Thickness Gauge

For online thickness measurements. To be mounted inside the FX 3360 PORTAIR. Requires the FX 3360-TCP Counter Plate or the FX 3360-STR Strip-Tester.

thickness profile of a used strip of paper machine clothing or an other test specimen.

With motorized strip drive and integrated counter plate for the Thickness gauge.

FX 3360-TCP Counter Plate

Magnetic counter plate for the thickness gauge of the FX 3360 PORTAIR.

FX 3360-PS1 External Power Supply

For power line operation of the FX 3360 PORTAIR (without battery).

FX 3360-STR Strip-Tester

Auxiliary accessory for the FX 3360 PORTAIR for simultaneous determination of an air permeability and

FX 3360-BLI Spare Battery

Spare rechargeable battery for the FX 3360 PORTAIR.



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Test Report

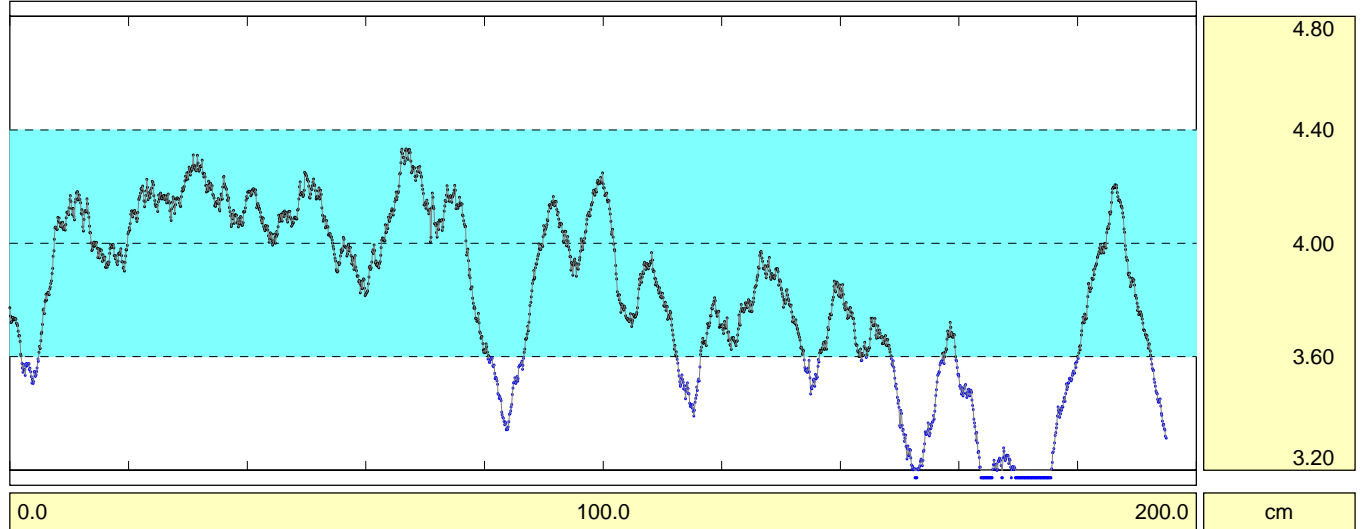
Style: FELT
Reference: CD

Date: 13.10.2006, 10:53:08
Instrument: FX 3360 PORTAIR, s/n 111

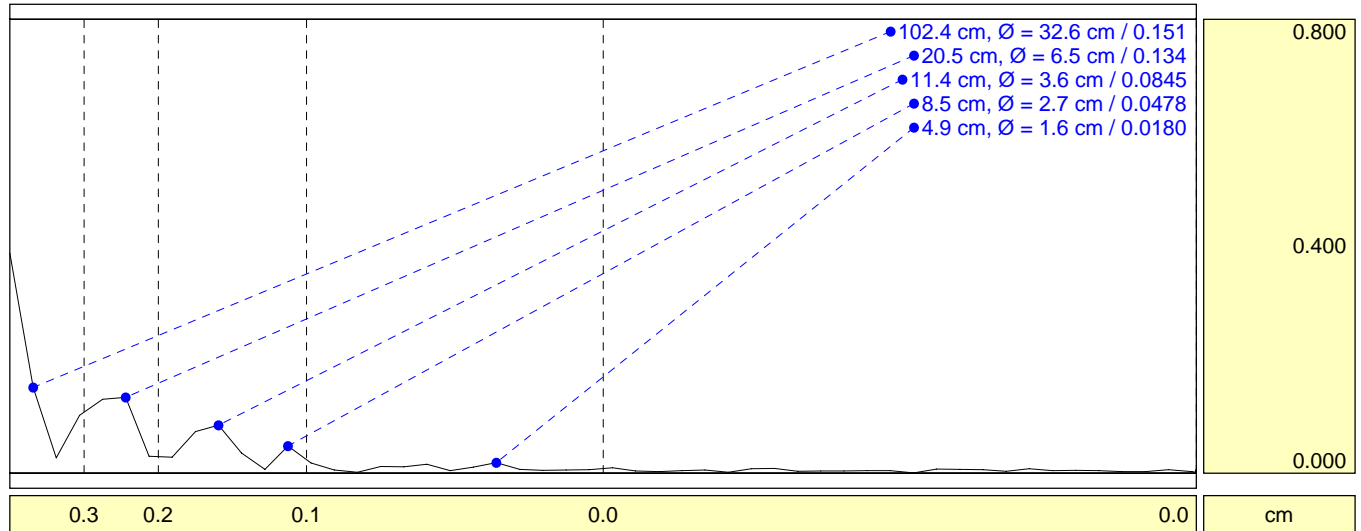
Material: Standard
Test pressure: 125 Pa
T-Factor: 1.00

Test area: 20 cm²
Test point density: 5'000 %
Orifice: 1.6 mm, s/n 10003

Air Permeability



FFT (1024, Rectangle, 0 %)



Average:	3.82 cfm	CV:	8.2 %	Error (+/-):	0.0 / 24.5 %
Minimum:	2.94 cfm	Cpk:	0.230	Tests:	1'950
Maximum:	4.33 cfm				

Comment: